

4. *A New Solifuge and Scorpion from South-West Africa.*

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(With 3 Text-figures.)

*Solpuga striata* Krpln.

(Text-fig. 1.)

Beit. z. Kennt. Land- u. Süßwasserfauna Deutsch-Südwestafrikas,  
Skorpiones u. Solifugae, p. 124, fig. 1, 1914.

THIS species, founded on a very immature specimen from farm "Voigtsland," about 38 kms. east of Windhuk, is apparently very closely allied to *celeripes* Hirst.\* We have a series of adult male examples from Okahandja—which is only about 20 miles distant from "Voigtsland"—and from farm "Quickborn," near Okahandja, presented by Mr. R. D. Bradfield, which presumably belong to *striata*, assuming that only one species of this group occurs in Damara-



FIG. 1.—*Solpuga striata* Krpln. Upper mandible and flagellum of adult male.

land. They may be the same also as the species recorded from Damaraland recently † under the name of *sericea* Poc., a species founded on Salisbury specimens: for they have relationships with that species.

The Okahandja males have the following characters:—

Upper surface of chelicera with some spiniform bristles and a few long bristly setae; base of flagellum high with well-rounded outline,

\* Manchester Memoirs, lvi, No. 2, p. 10, fig. 2, 1911.

† Dr. R. Lawrence in Ann. S. Afr. Mus., vol. xxv, p. 261, 1928.

margin of hinder half brown, otherwise the colour is pale; free portion of flagellum flattened antero-posteriorly; viewed from above it is broadest at the base, thence tapering quite regularly to the apex which is finely pointed; in side view the ascending portion is lightly curved, becoming suddenly curved downwards and narrowing rather abruptly near the apex. No tooth on the superior inner margin of the fang near its base. Stridulatory area with seven ridges. Lower jaw with short fang, but the apex of the first tooth is slightly nearer to the apex of the basal tooth than to the tip of the fang. Lower jaw with feathered bristles on the inner surface.

The flagellum of these specimens is shorter than that of *celeripes*, and the apical end is not so sharply differentiated as in that species; but quite probably they will prove to be connected by intermediates. Total length, including chelicerae, 18 mm.

*Chelypus shortridgei* sp. nov.

(Text-fig. 2.)

*Type*.—A single adult male specimen collected by Captain G. C. Shortridge at a locality about 10 miles north of Karakuwisa, in the bed of the Omuramba-Omatako River, about 140 miles N.N.E. of Grootfontein township, South-West African Protectorate, on May 4th 1929. It is the first record of the genus from South-West Africa.

The species is closely related to *C. macronyx* Hewitt (Records Albany Museum, iii, p. 214, 1919), taken in some part of North-West Rhodesia. The surfaces of the chelicerae and head-plate are apparently more spinose or granulate than in *shortridgei*, and there are differences in the form of the flagellum apically. The presence of a distinct double row of teeth in the lower jaw may also prove peculiar to *shortridgei*. In both species, however, only a single specimen is known.

*Lower Jaw*.—The terminal fang is strongly upturned. No large teeth whatever, but two dental rows are clearly represented; the inner row, consisting only of several indistinct denticles, is quite short, extending from the distal end of the patch of stiff setae to the base of the fang; outer row long, including two small teeth basally and a few minute denticles mostly distal thereto; between the two small teeth is a single denticle situated nearer to the basal tooth.

*Upper Jaw*.—Upper surface with rather stiffish hairs and a few minute and slender spinules towards the base of the fang, especially on the inner side. Fang well curved downwards. A small dense

patch of about 17 or 18 short spines on the mesial surface just posterior to the large black tubercle situate dorsally near the base of the fang on its inner side. Posterior to this tubercle and more mesially situate are two other moderate sized black tubercles. There is only one functional row of teeth, the outer row; it includes 5 widely spaced teeth, the middle one the largest; the inner row is represented by a single minute denticle basally and a tubercle immediately adjacent to the basal enlargement of the flagellum. Mesial surface with long silky hairs except over the "stridulatory area"; also, in the region where feather-bristles occur in *Solpuga* the hairs are relatively stiff.

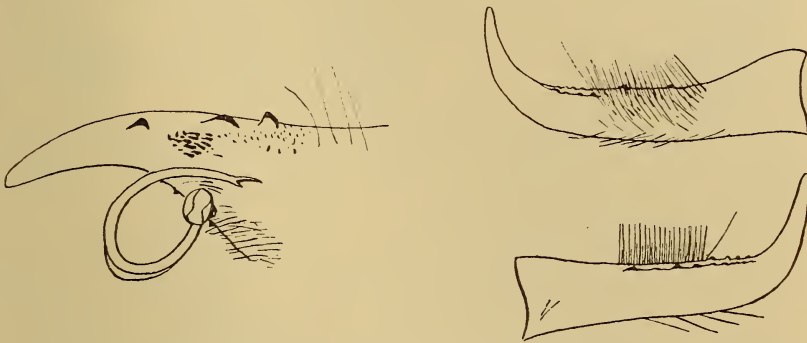


FIG. 2.—*Chelypus shortridgei* sp. nov. Upper jaw and flagellum, inner side.  
Lower jaw: above, inner side; below, outer side.

Stridulatory area with a reticulation of fine grooves but no parallel ones, and none arranged longitudinally.

*Flagellum* is freely rotatable; has a large cup-like base; has a flattened membranous extension at the basal curve; is bifid at the apex, both portions being finely pointed, the inner one being tooth-like and much shorter than the other.

*Head-plate* bearing long hairs and with very minute dust-like granulation scarcely visible under a hand-lens. Two distinct ocular tubercles, the eye on the outer side of each.

*Legs*.—Claws of third leg both longer than the peduncle, of the one only slightly, of the other  $1\frac{1}{3}$  times longer. (Claws of II lacking in specimen.) Patella II with a row of 6 spines on the outer side. Patella III with the extensive granulated area bordered on one side by a row of 9 short stout spines, basal ones strongest, and on the other side by 3 longer spatulate spines near the distal end. A row of weaker spines probably occurs along tibia and tarsus III, but the spines are missing in the specimen except one on the tarsus.

*Colour.*—Very pale throughout, except anterior portion of head-plate which is infuscated, spines and spinous areas which are reddish; fang of upper jaw up to the two mesial dorsal tubercles and the whole of the lower jaw except the hairy parts dark chestnut.

Total length, including chelicera, 21 mm.

The occurrence of two rows of teeth in the lower jaw is noteworthy. In *Solpuga* an inner row is more or less represented, but only in rudimentary form towards the base of the jaw. In that genus the inner tooth row may perhaps be represented distally by a sharp but not prominent ridge on the inner surface of the terminal fang.

In the specimen now described, the inner row of teeth is not in any way represented towards the base of the jaw, being only found distal to the patch of bristles; none of which are feathered, but is not continued into the terminal fang as a ridge.

In the genus *Ceroma* the inner tooth row of the lower jaw is also represented by a prominent ridge more nearly in the position occupied by that of *Chelypus*; it is continued, however, into the terminal fang, but only very feebly so.

I take this opportunity of recording the type locality of *Chelypus barberi* Purcell as Zandkuil. The late Mr. H. Barber told me that it was taken in June, "running round and round and winding about on the ground." On the other hand, Captain Shortridge remarks that the specimen he collected was walking as slowly as a tortoise over loose sand; it was pugnacious like an ordinary *Solpuga* and the hooked legs appeared to be grasping organs.

*Opisthophthalmus opinatus* (Simon).

Ann. Soc. ent. France, p. 382, 1887.

This species, described under the name of *Mossamedes opinatus*, and supposed to have been collected in Mossamedes, is still imperfectly known. Simon described the hand as "supra laevis obsoletissime tuberculo-striata," and the tergites as "subtilissime punctata." According to Kraepelin, all the tergites and sternites are "fein nadelstichig," whilst the hand has a "wulstigen kiel," and its inner surface "nadelstichigen wulsten"; also the smooth interocular area is "nadelstichig." Whether Kraepelin's two accounts (*Das Tierreich*, Scorpiones, p. 130; and *Jahrb. der Hamburg. Wiss. Anst.*, xi, 1, p. 81, 1894) are based on precisely the same form as that described by Simon is a point not determinable from their descriptions; quite possibly they are not so, for the pectinal teeth of the female are

16-18 according to Simon, 19-21 according to Kraepelin. The form described below as

*Opisthophthalmus opinatus bradfieldi* subsp. nov.

was collected by Mr. R. D. Bradfield in limestone crevices at Krantzberg in the Namib desert, near Usakos, South-West African Protectorate. The types are one adult female and one subadult male ;



FIG. 3.—*Opisthophthalmus opinatus bradfieldi* subsp. nov. Type male (left) and female (right) specimens from Krantzberg.

these and two other examples were kindly presented to the Albany Museum by Mr. Bradfield. The more important characters are : carapace with a smooth and polished interocular area which is free of punctations except on each side about four faint ones in the female, sides of carapace granular but not coarsely so, anterior lobes with granular edge which is lightly curved, median incision deep and quite short, median groove deep in front of the median eyes and its margins granular, becoming faint and shallow near the median incision where it bifurcates, although in the male the bifurcation is imperfect ; tergites I-VI of female all with scattered punctations which are superficial and not conspicuous, of male without punctations or almost so ; all the sternites with punctations, but quite few in number and almost entirely confined to the sides ; caudal segments with granular superior keels, II-IV with subspiniform end-

teeth, I and II without inferomedian keels (*i.e.* not defined on the mesial side), III with inferomedian keels which have several punctations but no granules, IV with granulations and punctations; hand quite stout in female, less so in male—but apparently not so prominently lobed as in the type—finger-keel much broken up into isolated granules, only in the distal half more or less continuous, the outer portion of the upper surface with rather small well-separated granules, and down the middle an accessory keel represented by a rather irregular row of granules, the inner portion of the upper surface well curved, in female entirely covered with isolated but closely packed flattish tubercles which are rounded or oval or irregular, in male with large granules less closely packed and not much flattened, accessory keels being lacking in female, feebly indicated in male; no punctations traceable on the upper surfaces of the hand; lower surface of hand well granulated over the inner portion; antero-dorsal keel of brachium fairly smooth but weakly crenulate, postero-dorsal keel granular and very indefinite; antero-dorsal crest of humerus granular and very well defined; fourth tarsus with 2 spines on its anterior edge below, the superior lobe much shorter than the lateral lobes; protarsi I and II with 3 longer spines on the outer side superiorly, and below with 5 short spines in the distal half of the segment; genital operculum much longer relatively in the female; pectinal teeth of male 24–25, of female 17–19, the scape in the female being free of teeth over a distance equal to about a third of its length; another small male has 23 pectinal teeth. Chelicerae with well-developed stridulatory lamellae.

*Colour.*—Carapace, tergites and tail brown, not very dark; legs and vesicle yellow; palps a darker brown in the adult female, but not in male and young, the keels not conspicuously darker except distally in the female.

*Measurements.*—Length of carapace, M. 13, F. 17; breadth thereof, M. 12·2, F. 17; distance from hind margin to median eyes, M. 5·5, F. 6·6; length of tail, M. 41, F. 61; length of caudal segment V, M. 9·5, F. 15·2; breadth thereof, M. 3·5, F. 4·5; breadth of hand, M. 9·5, F. 14·5; length of hand—back, M. 8, F. 11; length of movable finger, M. 11·5, F. 17.

The male, though so much smaller than the female, is apparently sexually mature, judging from the opercular characters. It may be noted that the proportions of the hand are not very different in the two sexes, less so than is usual between fully adult specimens in this genus. There is a difference in the nature of the surfaces of the

tergites which are smooth and polished in the female, but quite matt in the male. An important character of the species is the depth and shortness of the median incision of the carapace and the abbreviated bifurcation of the median groove; in this respect, the species agrees well with a *Pandinus* and differs from any typical *Opisthophthalmus*. In the stridulatory characters it agrees entirely with the latter and likewise in the pedipalp generally. The chief distinctive characters of *bradfieldi* seem to be those furnished by the surfaces of the hand.

According to Mr. Bradfield, this scorpion has a very restricted range at Krantzberg, occurring only on about one acre of limestone rock in which it occupies crevices about 2 feet deep which seem to be partly made by the animal.